Northwest Partnership Helps Restore Olympia Oyster

Project Improves Habitat in Puget Sound

PERSONNEL FROM NAVY Region Northwest (NRNW) partnered with personnel from the Puget Sound Restoration Fund (PSRF) to help bring back the Olympia Oyster to Puget Sound.

The Navy's environmental stewardship in the Pacific Northwest is a key part of its mission. In the state of Washington, much of this stewardship is focused on restoring Puget Sound. Home to a wide array of marine animal species, Puget Sound is most recognizable as the large body of water that seeps into the northwest corner of the state.

Up until European settlers arrived, the Olympia Oyster played a central role in the diets of Northwest Native American tribes. It also enhanced the environment, filtering seawater and creating livable habitat for crabs, anemones and salmon.

However, once settlers arrived in the Pacific Northwest, this cultural resource was devastated. Olympia Oyster harvesting became a booming industry, with annual harvests of up to 100,000 bushels. The oysters quickly began to die out in the 1900s. Pollution and habitat loss only compounded this dire situation.

water-pump. These large shells sink to the muddy flats of the bay, where they rest on the ground and give Olympia Oyster larvae a surface to latch on to and grow.

"It's that emergent structure we're trying to provide," said Betsy Peabody, the founder and executive director of PSRF who coordinated the event.

This essential structure is basically a layer of oyster shell that is two to four inches thick. Adding it to the environment makes the habitat more favorable for oyster larvae to thrive in. It also helps the Olympia Oyster become

Making sure Olympia Oysters survive is essential for maintaining the biodiversity of Puget Sound.

PSRF, a non-profit organization, has the distinct goal of taking action to restore the habitat of Puget Sound. To help complete this vision, the Navy provides logistics to support oyster "seeding" projects. These projects help to foster the growth of the Olympia Oyster, a native oyster species that has a long history in the Pacific Northwest.

But, since 2005, the Navy has provided the PSRF with two significant resources to help reestablish the Olympia Oyster: access to a pier and the use of a barge. These logistics are instrumental in achieving restoration success.

The actual "seeding" consists of loading Pacific oyster shells onto a Navy barge and then blowing them off into the water with a high-pressure

self-sustaining, which is the guiding vision for the restoration project.

"It's so they can re-colonize the area they've used historically," said Peabody.

Making sure Olympia Oysters survive is essential for maintaining the biodiversity of Puget Sound. If common oysters were merely grown in a hatchery and then dumped into the

What is Puget Sound?

PUGET SOUND IS a large estuary that cuts into the northwest corner of the state of Washington. It is made up of an intricate number of inlets, bays and channels that mix fresh water with salt water from the Pacific Ocean. The borders of Puget Sound extend from the waters around Olympia up and into the Straits of Juan de Fuca, covering 2,458 square miles of land and sea.

Puget Sound is home to an assortment of wildlife. According to the Washington State Department of Ecology web site, the following live in Puget Sound's ecosystems:

- 14 species of marine mammals,
- 31 species of waterfowl,
- 57 species of birds, and
- Over 70 species of terrestrial wildlife.

Numerous other marine species, such as starfish and shellfish, as well as all seven species of salmon, also inhabit this area.

The Sound's shores are also appealing to people. Two of Washington's largest cities, Seattle and Tacoma, as well as the state capital, Olympia, are located along the Puget Sound waterfront. Approximately four million people live in this region, roughly two-thirds of the entire state's population.

Puget Sound's geographical and cultural history is unique as well. Millions of years ago, glaciers moving across North America slowly carved out what is today's Puget Sound region. Only 20,000 years ago, Seattle was covered by a mile of ice—or five times as high as the city's icon, the Space Needle.

water, the ecosystem would become homogenized. That is why shells are used to give Olympia Oysters a chance to flourish.

Dogfish Bay was the site of the seeding project in 2009. The bay is an ideal area of Puget Sound that has historic Olympia Oysters living in its waters.

While the impact for the Olympia Oyster is clear, the benefits of this effort extend to other marine animals as well.

"This complex habitat formation, which the oyster is the building block for, is crucial for species such as juvenile salmonids, sea birds and even marine mammals," said Bill Kalina, the environmental officer for Naval Magazine Indian Island, a NRNW installation.

Olympia Oysters also improve the overall ecosystem by filtering built-up silt and nitrogen. Each oyster can filter up to 12 gallons of water every day, according to a PSRF project report.

"Another reason we support PSRF efforts is because of the nearshore habitat enhancement on and near our Navy-owned tidelands," said Kalina. "Olympia Oysters thrive in ecologically functional marine habitat areas and as such they are a good indicator species for assessing nearshore ecosystem conditions. They tell you if your tidelands are healthy."

The last vestige of approximately 700 cubic yards of Pacific Oyster shell is loaded onto a Navy barge on the second day of oyster seeding. Shortly after this, the barge made its way into Dogfish Bay, where the shells were blasted into the water.

"For this reason, the Navy's natural resources program has viewed Olympia Oyster restoration as a key part of the nearshore habitat enhancement effort," he said.

Peabody expressed that receiving help from the Navy contributes to the success of the restoration. "It's great to get support from the U.S. Navy," she said. "It's a huge help."

In June 2009, NRNW facilitated the spreading of approximately 700 cubic yards of oyster shell into Puget Sound. The shells were loaded onto a barge by an excavator at the Naval Undersea Warfare Center Division Keyport pier.

Peabody noted that having access to a Navy barge also makes the operation very efficient. The quantity of shell that is seeded into Puget Sound has grown over the years, and a barge is now needed to handle the scope of the project.

Other Partnerships in Puget Sound

NRNW PERSONNEL WORK with other organizations to ensure that Puget Sound is on the path to being as healthy as possible. NRNW is a charter member of the Puget Sound Federal Caucus (PSFC), whose focus is to coordinate federal actions to protect and recover the Puget Sound ecosystem.

The PSFC consists of 13 federal agencies with the basic premise that working together is the most efficient way to get complex projects done. Each agency is tasked to develop initiatives to be implemented in Puget Sound. These initiatives, whether they are focused on restoration, protection or research, all align with another agency's plan for the Sound, that of the Washington State Puget Sound Partnership (PSP).

The aim of the PSP is achieving a healthy Puget Sound ecosystem. It was commissioned in 2005 by Washington State Governor Chris Gregoire, with a vision of restoring the Sound by 2020. By pooling resources and synchronizing environmental stewardship, the members of the PSFC are working toward realizing this vision.

TOP: The Navy barge leaves the Pier at Naval Undersea Warfare Center Division Keyport on the second day of oyster seeding. After a short voyage to Dogfish Bay, the shells were seeded into a carefully marked area of tidelands.

ABOVE: James Travers, NBK executive officer, seeds oysters into Dogfish Bay with a high pressure water pump. Gregory Leicht, Naval Facilities Engineering Command Northwest, back left, and Brian Allen, PSRF ecologist, back right, look on.

"It's been a great partnership," said Peabody, referring to the Navy. "They help us out with all our little crises."

Commander James Travers, executive officer of Naval Base Kitsap (NBK), visited the site of the seeding and approved of the project. "I found the visit to be very educational and enlightening," he said.

He also said the Navy is proud of the part it can play in the project, and that the PSRF has "an extremely worthy cause."

Other partners that made this collaboration successful include the Washington Department of Fish and Wildlife, the Washington Department of Natural Resources, the U.S. Department of Agriculture, The Nature Conservancy, the

The Basics About the Puget Sound Restoration Fund

PSRF IS A non-profit environmental organization located in the state of Washington. Its single focus is, "restoring the marine habitat, water quality, and native species in Puget Sound." To accomplish this, the PSRF implements action-based projects. The PSRF has been working toward its objectives since 1997, collaborating with a variety of partners to achieve restoration success.

The results of the PSRF's work include the following:

- Planted ten million native oyster seeds at 80 sites with over 100 partners.
- Enhanced 25 acres of native oyster habitat with either shell or seed.
- Planted 100,000 Pacific Oysters in Eagle Harbor to mitigate nutrient pollution.
- Restored 575 acres in Drayton Harbor to conditional shellfish harvest.

The PSRF has won numerous awards as well, including:

- The Local Hero Award, Governor Gary Locke, 2003.
- Environmental Excellence Award, Washington State Department of Ecology, 2005.
- Native Oyster Project showcased at the White House Conference of Cooperative Conservation, 2005.
- Excellence in Restoration Award, National Oceanic and Atmospheric Administration, 2006.

In addition to Olympia Oyster restoration, the PSRF completes other projects that improve Puget Sound. These projects include:

1. Saving the pinto abalone, a native mollusk species.
2. Managing three community shellfish farms.
3. Restoring the intertidal zone.

4. Monitoring toxicity levels in shellfish.
5. Setting up shellfish gardens with citizens.
6. Helping conduct surveys about the economic relevance of shellfish populations.
7. Researching Geoduck planting.
8. Raising awareness about bacteria levels in Manzanita Bay.

For more information, visit PSRF's web site at www.restorationfund.org or email Betsy Peabody, PSRF's Executive Director, at betsy@restorationfund.org.

National Oceanic and Atmospheric Administration, Delta Marine, the Fish America Foundation, the Suquamish Tribe, the Squaxin Island Tribe, the Port of Poulsbo and Kitsap County.

Kalina stressed the value of partnering for environmental causes. "It strengthens the bond between the Navy and other groups," he said. "When you partner, you get things done that you can't otherwise do."

Today, Puget Sound is home to the third largest fleet concentration, and provides a favorable environment for Sailors to safely operate. ⚓

Wesley DeShano made significant contributions to this article.

Photos by Wesley DeShano

CONTACTS

Betsy Peabody
Puget Sound Restoration Fund
206-780-6947
betsy@restorationfund.org

Sheila Murray
Commander, Navy Region Northwest
360-396-4981
DSN: 744-4981
sheila.murray@navy.mil